REMARKS

Decorating sheets which have molded thereto resin via an injection molding operation are generally known in the art; however, suffer from drawbacks as follows.

First, where the decorating sheet is made from a material such as pure ethylene-vinyl acetate film, there has been a problem in that heat of molten resin injected during an injection molding process is applied to the decorating sheet, which causes the decorating sheet to be stretched along flow of the molten resin, leading to breakage of the decorating sheet.

Second, where the decorating sheet is made from a material having high heat resistance and high elongation resistance, such as biaxially oriented polyethylene terephthalate, polyimide, polyether etherketone, polysulfone, polyethersulfone, polyetherimide, or polyamide-imide films, there has been a problem in that it is difficult to work the decorating sheet into a three-dimensional configuration. Specifically, the more deeply the decorating sheet is drawn, the more difficult it is to work the decorating sheet into a three-dimensional configuration.

Third, where the decorating sheet is made from a material having low rigidity, the decorating sheet is liable to not maintain its three-dimensional configuration, resulting in a lowered configuration retainability. In such a case, there has been a problem in that it becomes difficult to process the decorating sheet for trimming or in-mold decorating.

To eliminate these drawbacks, Applicant has developed a decorating sheet that exhibits properties such that the decorating sheet will not break during an injection molding operation when subjected to heated molten resin, and such that the decorating sheet can be easily worked into a maintainable three-dimensional configuration. Specifically, the decorating sheet includes a substrate sheet and a backing sheet, and exhibits the following characteristics

> (i) when a 10 mm wide test specimen of the decorating sheet is fixed between a pair of chucks at a chuck-to-chuck distance of 5 mm and then a load is applied at a constant rate of 500 mm/min to the test specimen at one end thereof under a temperature of from 62°C to 94°C, the test specimen exhibits a tensile strength at breakage thereof of at least 23 gf, and
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> (ii) properties of the decorating sheet change in response to being subjected to a temperature from 40°C to 200°C, and when a 10 mm wide test specimen of the decorating sheet is fixed between a

pair of chucks at a chuck-to-chuck distance of 5 mm and then a load of 20 gf is applied at a constant rate of 500 mm/min to the test specimen at one end thereof under a temperature from a first temperature within the range from 40°C to 200°C to a second temperature at which the decorating sheet decomposes, the test specimen exhibits a tensile elongation at breakage of at least 130%.

In contrast thereto, JP '397 is not concerned with the drawbacks of the conventional prior art, but rather is concerned with an injection molding operation by which a pattern can be formed on a shaped member, on which member it is difficult to form a pattern by printing. Specifically, the objective of JP '397 is to obtain an acrylic insert film for which molding resins of various colors can be used, such that after performing an injection molding operation a molded product, including the acrylic insert film, is endowed with a wood grain pattern exhibiting clear and distinct colors. JP '397 is not concerned with breakage of the acrylic insert film due to heat applied thereto during the injection molding operation.

Accordingly, where the instant invention is concerned with structural aspects of a molded product, i.e. prevention of breakage of a decorating sheet and the ability of the decorating sheet to maintain a three-dimensional form, JP '397 is concerned with an aesthetic aspect of a molded product, i.e. visual appearance thereof. Because of these differences between the instant invention and JP '397, it is respectfully submitted that, taken as a whole, the invention of the independent claims is substantially different than that of JP '397. Thus, it is respectfully submitted that each of independent claims 22, 39, 41 and 43 represent an inventive contribution to the art which should not be rejected as being unpatentable over JP '397.

None of the other references relied upon by the Examiner pertain to the drawbacks addressed by Applicants' inventive decorating sheet, and therefore, all of the claims should be allowed over any possible combination of the references relied upon by the Examiner. Thus, claims 22-43 should be allowed.

In view of the above remarks, it is respectfully submitted that the present application is in condition for allowance and an early Notice of Allowance is earnestly solicited.

If after reviewing this Request, the Examiner believes that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the Applicant's undersigned representative by telephone to resolve such issues.

Respectfully submitted,

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